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For information, contact:
John F. Papp, Chromium Commodity Specialist
U.S. Geological Survey
989 National Center
Reston, VA 20192
Telephone: (703) 648-4963, Fax: (703) 648-7757
E-mail: jpapp@usgs.gov

Joseph M. Krisanda (Data)
Telephone: (703) 649-7987
Fax: (703) 648-7975
E-mail: jkrisand@usgs.gov

Internet: http://minerals.usgs.gov/minerals

CHROMIUM IN NOVEMBER 2003

On the basis of gross weight, consumption of chromium ferroalloys and metal in November 2003 decreased slightly compared with consumption in October 2003, according to the U.S. Geological Survey.

Included in this Mineral Industry Surveys are U.S. salient chromium statistics, U.S. government stockpile inventory of chromium materials in November 2003, consumption by end use and consumer stocks of chromium ferroalloys and metal at the end of November 2003, U.S. foreign trade data for selected chromium-containing materials in October 2003, and chromite ore prices.

Update

The Defense National Stockpile Center (DNSC) accepted bids for chromium metal in December. DNSC awarded 173 metric tons (t) of chromium metal valued at $727,180 in 14 lots to three companies (ABS Alloys & Minerals, Cometals Company, and Voss Metals Company, Inc.) (Defense National Stockpile Center, 2003). The price ranged from $1.75 to $2.50 per pound.

The DNSC announced the sale in December of 6,350 t of ferrochromium valued at $4.5 million. The ferrochromium sold comprised 5,443 t of high-carbon ferrochromium and 907 t of low-carbon ferrochromium (Defense National Stockpile Center, 2004). The price averaged $709 per ton.

References Cited

Defense National Stockpile Center, 2003, Stockpile accepts chromium metal bids: Defense National Stockpile Center, News Release DNSC-04-2404, December 19, 1 p.

Defense National Stockpile Center, 2004, Stockpile announces ferrochromium sales for December 2004: Defense National Stockpile Center, News Release DNSC-04-2402, January 6, 1 p.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS[1]

(Metric tons, gross weight)

	2002	2003					
	January-December[2]	Second quarter	September	Third quarter	October	November	January-November[2]
Production:							
Stainless steel production[3]	2,180,000	570,000	174,000	520,000	204,000	176,000	2,010,000 [4]
Components of U.S. supply:							
Stainless steel scrap receipts	815,000	191,000	50,000	173,000	68,500	63,500	693,000
Stainless steel scrap consumption	1,190,000	267,000	75,300	247,000	90,300	91,500	976,000
Imports for consumption:							
Chromite ore	112,000	41,200	4,570	46,100	410	NA	149,000 [5]
Ferrochromium:							
More than 4% carbon	283,000	96,100	40,200	90,300	48,800	NA	332,000 [5]
More than 0.5%, but not more than 3% carbon	8,040	816	420	2,310	407	NA	5,140 [5]
Not more than 0.5% carbon	25,600	4,480	2,170	5,660	258	NA	16,600 [5]
Ferrochromium silicon	28,900	15,200	8,500	11,400	3,090	NA	33,000 [5]
Total ferroalloy imports	345,000	117,000	51,300	110,000	52,600	NA	387,000 [5]
Chromium metal[6]	7,430	2,540	672	2,080	502	NA	7,310 [5]
Stainless steel	752,000	168,000	52,500	155,000	57,500	NA	542,000 [5]
Stainless steel scrap	81,000	18,700	9,920	21,900	9,530	NA	66,300 [5]
Distribution of U.S. supply:							
Industry consumer, chromium ferroalloys and metal	384,000	95,700	26,100	81,100	29,100	28,500	329,000
Exports:							
Chromite ore	24,300	3,380	2,040	26,000	1,030	NA	32,200 [5]
Chromium ferroalloys:							
High-carbon ferrochromium	13,500	1,020	237	697	195	NA	2,500 [5]
Low-carbon ferrochromium	2,070	388	79	198	82	NA	1,110 [5]
Ferrochromium silicon	281	59	63	144	117	NA	320 [5]
Total ferroalloy exports	15,900	1,460	378	1,040	393	NA	3,930 [5]
Chromium metal	745	182	47	261	72	NA	725 [5]
Stainless steel	273,000	89,800	23,000	78,600	29,100	NA	274,000 [5]
Stainless steel scrap	342,000	101,000	31,300	119,000	43,500	NA	441,000 [5]
Stocks at end of period:							
Industry consumer, Chromium ferroalloys and metal	13,900	XX	14,800	XX	16,200	15,800	XX
Government stockpile:							
Chromite ore	204,000	XX	153,000	XX	154,000	154,000	XX
Chromium ferroalloys	763,000	XX	700,000	XX	695,000	689,000	XX
Chromium metal	7,220	XX	7,100	XX	7,120	7,120	XX

NA Not available. XX Not applicable.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]May include revised data.

[3]Data on stainless steel production reported by American Iron and Steel Institute; monthly, quarterly, and year-to-date production of stainless and heat-resisting raw steel.

[4]Includes revised data which is not broken out by specific month.

[5]Includes January through October data; November data not available.

[6]Includes waste and scrap and other.

TABLE 2

U.S. REPORTED CONSUMPTION AND STOCKS OF CHROMIUM PRODUCTS IN 2003[1]

(Metric tons, gross weight unless otherwise noted)

	October	November	January-November[2]
Consumption by end use:			
Alloy uses:			
Iron alloys:			
Steel:			
Carbon steel	289	286	3,330
High-strength low-alloy steel	552	516	5,970
Stainless and heat-resisting steel	24,900 r	24,400	282,000
Full alloy steel	1,310	1,200	14,200
Electrical steel	W	W	W
Tool steel	422	464	5,180
Unspecified Steel	W	W	W
Cast irons	W	W	W
Superalloys	642	598	7,080
Other alloys[3]	74	84	997
Total	29,100	28,500	329,000
Total, chromium content	16,800	16,300	193,000
Consumption by material:			
Low-carbon ferrochromium	1,660	1,720	19,500
High-carbon ferrochromium	23,500	22,900	268,000
Ferrochromium silicon	3,410	3,440	35,800
Chromium metal	335	269	3,530
Chromite ore	W	W	W
Chromium-aluminum alloy	31	34	386
Other chromium materials	W	W	W
Total	29,100	28,500	329,000
Total, chromium content	16,800	16,300	193,000
Consumer stocks:			
Low-carbon ferrochromium	1,280	1,350	XX
High-carbon ferrochromium	W	W	XX
Ferrochromium silicon	1,350	1,250	XX
Chromium metal	192	198	XX
Chromite ore	W	W	XX
Chromium-aluminum alloy	40	38	XX
Other chromium materials	W	W	XX
Total	16,200	15,800	XX
Total, chromium content	9,500	9,220	XX

[r]Revised. W Withheld to avoid disclosing company proprietary data; included in "Total." XX Not applicable.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]May include revised data.

[3]Includes welding and alloy hard-facing rods and materials, wear- and corrosion-resistant alloys, and aluminum, copper, magnetic, nickel, and other alloys.

TABLE 3

U.S. GOVERNMENT STOCKPILE INVENTORY OF CHROMIUM MATERIALS[1, 2]

(Metric tons)

Period	Chromite ore		Chromium ferroalloys		Chromium metal
	Chemical	Refractory	High-carbon ferro-chromium	Low-carbon ferro-chromium	
2002:					
November	78,300	127,000	535,000	232,000	7,220
December	78,300	126,000	531,000	232,000	7,220
2003:					
January	78,300	126,000	527,000	231,000	7,220
February	78,300	126,000	521,000	229,000	7,220
March	78,300	98,000	517,000	228,000	7,210
April	78,300	98,000	505,000	228,000	7,210
May	78,300	98,000	501,000	227,000	7,160
June	71,500	83,700	497,000	226,000	7,160
July	64,700	83,700	492,000	225,000	7,150
August	71,500 [3]	82,100	484,000	220,000	7,150
September	70,900	82,600	482,000	218,000	7,100
October	71,500 [3]	82,600	477,000	218,000	7,120 [3]
November	71,500	82,600	472,000	217,000	7,120

[1]Data are rounded to no more than three significant digits.

[2]These Government stocks are reported by the Defense National Stockpile Center in Inventory of Stockpile Materials R-1, which reports uncommitted inventory. Uncommitted inventory is that inventory for which there is no sales contract. Committed inventory is that inventory for which there is a sales contract; however, the material has not yet been shipped. For chromium materials, the R-1 report includes chromium materials that (1) meet specifications and are held in excess of goal and (2) do not meet specifications and are held in excess of goal. The R-1 report excludes chromium materials that are committed and awaiting shipment.

[3]The increase resulted from the reclassification of physical inventory from committed to uncommitted. It did not result from the addition of chromium materials to the stockpile.

Source: Defense National Stockpile Center.

TABLE 4

U.S. EXPORTS OF CHROMITE ORE, CHROMIUM FERROALLOYS, AND METAL[1]

Period	Chromite ore		Chromium ferroalloys[2]			Chromium metal[3]	
	Gross weight (metric tons)	Value (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value (thousands)	Gross weight (metric tons)	Value (thousands)
2002:							
October	2,490	$842	9,880	6,460	$4,650	72	$625
November	456	122	520	307	462	69	671
December	415	93	296	178	288	71	597
January-December	24,300	4,070	15,900	10,100	10,100	745	7,450
2003:							
January	747	280	483	290	472	73	508
February	442	159	196	111	230	47	499
March	596	166	352	217	445	89	589
April	1,900	209	390	230	439	64	877
May	444	124	317	190	276	72	912
June	1,030	204	756	443	653	46	579
July	985	202	273	150	252	95	1,030
August	22,900	949	387	232	455	119	1,320
September	2,040	626	378	211	479	47	1,160
October	1,030	214	393	208	485	72	1,350
January-October	32,200	3,130	3,930	2,280	4,190	725	8,830

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Includes low-, medium-, and high-carbon ferrochromium and ferrochromium silicon.

[3]Includes chromium metal waste and scrap and unwrought powders.

Source: U.S. Census Bureau.

TABLE 5

U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE, FERROCHROMIUM, AND CHROMIUM METAL[1]

(Metric tons)

	2002	2003		
	January-December[2]	September	October	January-October[2]
Chromite ore:				
Not more than 40% chromic oxide:				
Gross weight	1,080	26	--	103
Chromic oxide content	370	12	--	36
More than 40% but less than 46% chromic oxide:				
Gross weight	10,600	49	92	821
Chromic oxide content	4,470	22	42	378
46% or more chromic oxide:				
Gross weight	100,000	4,490	318	148,000
Chromic oxide content	46,700	2,100	154	69,000
Total, all grades:				
Gross weight	112,000	4,570	410	149,000
Chromic oxide content	51,600	2,130	196	69,400
Ferrochromium:				
Low-carbon:[3]				
Not more than 0.5%:				
Gross weight	25,600	2,170	258	16,600
Chromium content	17,000	1,510	178	11,400
More than 0.5% but not more than 3%:				
Gross weight	8,040	420	407	5,140
Chromium content	4,960	282	279	3,280
Total, low-carbon:				
Gross weight	33,600	2,590	665	21,800
Chromium content	21,900	1,800	457	14,700
High-carbon:[4]				
Gross weight	283,000	40,200	48,800	332,000
Chromium content	169,000	25,400	27,900	191,000
Total, all grades:				
Gross weight	316,000	42,800	49,500	354,000
Chromium content	191,000	27,200	28,400	206,000
Chromium metal:				
Unwrought powders	776	124	102	1,580
Waste and scrap	83	(5)	20	271
Other than waste and scrap amd unwrought powders	6,570	547	380	5,460
Total, all grades	7,430	672	502	7,310

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]May include revised data.

[3]Ferrochromium containing not more than 3% carbon.

[4]Ferrochromium containing more than 4% carbon.

[5]Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 6

U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE IN 2003, BY GRADE AND BY COUNTRY[1]

Grade and country	October			January-October[2]		
	Gross weight (metric tons)	Cr_2O_3 (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Cr_2O_3 (metric tons)	Value[3] (thousands)
Not more than 40% chromic oxide, South Africa	--	--	--	103	36	$34
More than 40% but less than 46% chromic oxide, South Africa	92	42	$15	821	378	125
46% or more chromic oxide:						
Germany	--	--	--	20	13	8
South Africa	318	154	47	148,000	69,000	7,030
Total	318	154	47	148,000	69,000	7,040
All grades:						
Germany	--	--	--	20	13	8
South Africa	410	196	61	149,000	69,400	7,190
Total	410	196	61	149,000	69,400	7,200

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]May include revised data.

[3]Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

Source: U.S. Census Bureau.

TABLE 7

U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2003, BY GRADE AND BY COUNTRY[1]

Grade and country	October			January-October[2]		
	Gross weight (metric tons)	Chromium content (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value[3] (thousands)
High-carbon ferrochromium:[4]						
China	--	--	--	20	14	$25
Kazakhstan	15,200	10,400	$9,950	113,000	78,200	66,500
Russia	1,540	981	932	3,610	2,390	2,380
South Africa	26,000	13,000	10,100	186,000	92,800	63,800
Sweden	--	--	--	12	7	7
Zimbabwe	6,040	3,610	2,920	29,000	17,500	11,800
Total	48,800	27,900	23,900	332,000	191,000	145,000
Low-carbon ferrochromium:[5]						
More than 0.5% but not more than 3% carbon:						
Kazakhstan	300	206	260	1,100	758	934
Russia	91	62	156	122	82	202
South Africa	16	11	34	3,920	2,440	1,920
Total	407	279	450	5,140	3,280	3,060
Not more than 0.5% carbon:						
China	--	--	--	78	53	96
Germany	18	13	39	3,950	2,770	7,280
Japan	140	97	292	1,510	1,050	3,140
Kazakhstan	--	--	--	1,530	1,060	1,340
Russia	80	55	104	9,300	6,290	8,970
South Africa	--	--	--	72	48	95
Taiwan	--	--	--	17	9	20
Turkey	20	13	35	160	107	241
Total	258	178	469	16,600	11,400	21,200
All grades:						
China	--	--	--	98	67	121
Germany	18	13	39	3,950	2,770	7,280
Japan	140	97	292	1,510	1,050	3,140
Kazakhstan	15,500	10,600	10,200	116,000	80,000	68,800
Russia	1,710	1,100	1,190	13,000	8,760	11,600
South Africa	26,000	13,000	10,100	190,000	95,300	65,800
Sweden	--	--	--	12	7	7
Taiwan	--	--	--	17	9	20
Turkey	20	13	35	160	107	241
Zimbabwe	6,040	3,610	2,920	29,000	17,500	11,800
Total	49,500	28,400	24,800	354,000	206,000	169,000

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]May included revised data.

[3]Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

[4]Ferrochromium containing more than 4% carbon.

[5]Ferrochromium containing not more than 3% carbon.

Source: U.S. Census Bureau.

TABLE 8

U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2003, BY GRADE AND BY COUNTRY[1]

Grade and country	October		January-October[2]	
	Gross weight (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Value[3] (thousands)
Unwrought powders:[4]				
China	--	--	163	$562
France	--	--	1	8
Germany	(5)	$2	30	170
Japan	4	95	139	1,540
Kazakhstan	--	--	74	229
Russia	78	559	533	3,790
United Kingdom	21	160	639	3,220
Total	102	816	1,580	9,520
Waste and scrap:				
China	--	--	1	7
Germany	--	--	11	173
Japan	15	108	37	260
Korea, Republic of	--	--	3	18
Malaysia	--	--	1	3
Russia	3	74	205	827
Singapore	--	--	1	5
Taiwan	--	--	3	31
United Kingdom	2	15	8	76
Total	20	196	271	1,400
Other than waste and scrap and unwrought powders:				
Austria	--	--	(5)	8
China	124	419	1,400	4,780
Finland	--	--	(5)	7
France	54	459	1,190	8,600
Germany	(5)	20	74	421
India	--	--	(5)	2
Italy	(5)	2	(5)	5
Kazakhstan	--	--	260	843
Russia	20	74	1,060	3,650
Singapore	--	--	(5)	11
Spain	--	--	4	17
Switzerland	(5)	14	(5)	41
Taiwan	--	--	(5)	4
United Kingdom	181	1,140	1,470	9,080
Total	380	2,130	5,460	27,500
All grades:				
Austria	--	--	(5)	8
China	124	419	1,570	5,350
Finland	--	--	(5)	7
France	54	459	1,190	8,610
Germany	(5)	22	114	764
India	--	--	(5)	2
Italy	-5	2	(5)	5
Japan	19	203	177	1,800
Kazakhstan	--	--	334	1,070
Korea, Republic of	--	--	3	18
Malaysia	--	--	1	3
Russia	101	706	1,800	8,270
Singapore	--	--	1	16
Spain	--	--	4	17
Switzerland	(5)	14	(5)	41
Taiwan	--	--	4	35
United Kingdom	204	1,320	2,120	12,400
Total	502	3,140	7,310	38,400

See footnotes at end of table.

TABLE 8--Continued
U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2003, BY GRADE AND BY COUNTRY[1]

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]May include revised data.

[3]Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

[4]Separate category reported starting May 2003.

[5]Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 9
U.S. TRADE OF STAINLESS STEEL, BY PRODUCT, IN 2003[1]

	October		January-October	
Stainless steel product	Gross weight (metric tons)	Value[2] (thousands)	Gross weight (metric tons)	Value[2] (thousands)
Exports:				
Ingot	342	$1,830	3,700	$23,600
Flat-rolled (width > 600 mm)	14,400	27,400	141,000	282,000
Flat-rolled (width < 600 mm)	7,670	22,900	76,000	194,000
Bars and rods in irregular coils	331	1,390	2,040	7,370
Other bars and rods	1,550	7,930	14,400	72,600
Wire	662	4,420	7,040	44,400
Tubes, pipes, hollow profiles	4,140	16,200	29,000	118,000
Total	29,100	82,000	274,000	742,000
Stainless steel scrap	43,500	43,800	441,000	324,000
Grand total	72,700	126,000	714,000	1,070,000
Imports:				
Ingot	16,300	25,200	147,000	210,000
Flat-rolled (width > 600 mm)	22,900	40,800	204,000	343,000
Flat-rolled (width < 600 mm)	3,160	9,340	32,600	95,900
Bars and rods in irregular coils	1,900	3,180	28,100	46,400
Other bars and rods	4,750	10,900	49,400	112,000
Wire	2,610	8,010	25,700	79,000
Tubes, pipes, hollow profiles	5,820	24,700	54,900	213,000
Total	57,500	122,000	542,000	1,100,000
Stainless steel scrap	9,530	8,390	66,300	47,100
Grand total	67,000	131,000	608,000	1,150,000

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Export value is free alongside ship (f.a.s.). Import value is Customs import value, which generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

Source: U.S. Census Bureau.

TABLE 10
CHROMITE ORE PRICES

(Dollars per metric ton, gross weight unless otherwise noted)

Week ending	Turkey[1]		South Africa[2]				Philippines[3]
	1	2	1	2	3	4	
2002:							
10/04	70	80	40 - 50	50 - 70	100 - 120	40 - 50	125 - 145
10/11	70	80					
10/18	70	80					
10/25	70	80					
11/01	70	80	40 - 50	50 - 70	100 - 120	40 - 50	125 - 145
11/08	70	80					
11/15	70	80					
11/22	70	80					
11/29	70	80					
12/06	70	80	40 - 50	50 - 70	100 - 120	40 - 50	125 - 145
12/13	70	80					
12/20	70	80					
12/27	70	80					
2003:							
01/03	70	80	35 - 40	45 - 55	100 - 120	40 - 50	125 - 145
01/10	70	80					
01/17	70	80					
01/24	70	80					
01/31	70	80					
02/07	70	80	35 - 40	45 - 55	100 - 120	40 - 50	125 - 145
02/14	70	80					
02/21	70	80					
02/28	75	85					
03/07	75	85	40 - 50	50 - 70	100 - 120	40 - 50	125 - 145
03/14	75	85					
03/21	75	85					
03/28	75	85					
04/04	75	85	40 - 50	50 - 70	100 - 120	40 - 50 [r]	125 - 145
04/11	75	85					
04/18	75	85					
04/25	75	85					
05/02	75	85	40 - 50	50 - 70	100 - 120	40 - 50	125 - 145
05/09	75	85					
05/16	75	85					
05/23	75	85					
05/30	75	85					
06/06	75	85	40 - 50	50 - 70	100 - 120	40 - 50	125 - 145
06/13	75	85					
06/20	75	85					
06/27	75	85					
07/04	75	85	40 - 50	50 - 70	100 - 120	40 - 50	125 - 145
07/11	75	85					
07/18	75	85					
07/25	75	85					
08/01	75	85	40 - 50	50 - 70	100 - 120	40 - 50	125 - 145
08/08	83	93					
08/15	83	93					
08/22	83	93					
08/29	85	95					

See footnotes at end of table.

TABLE 10--Continued
CHROMITE ORE PRICES

(Dollars per metric ton, gross weight unless otherwise noted)

Week ending	Turkey[1]		South Africa[2]				Philippines[3]
	1	2	1	2	3	4	
2003:							
09/05	85	95	40 - 50	50 - 70	100 - 120	40 - 50	125 - 145
09/12	85	95					
09/19	85	95					
09/26	90	100					
10/03	90	100	40 - 50	50 - 70	100 - 120	40 - 50	125 - 145
10/10	90	100					
10/17	90	100					
10/24	90	100					
10/31	90	105					
11/07	95	110	40 - 50	50 - 70	100 - 120	40 - 50	125 - 145
11/14	95	110					
11/21	95	110					
11/28	NA	NA					
12/05	100	120	50 - 65	80 - 90	100 - 120	50 - 60	125 - 145
12/12	100	120					
12/19	120	140					
12/26	NA	NA					

NA Not available.

[1]Turkish 1 (T1) is called 38% - 40% Cr_2O_3 by Ryan's Notes (RN); T2 is called 44% Cr_2O_3 by RN.

[2]South African 1 (SA1) is called chemical grade, 46% Cr_2O_3, wet bulk, free-on-board (f.o.b.) by Industrial Minerals (IM); SA2 is called foundry grade, 46% Cr_2O_3, wet bulk, f.o.b. by IM; SA3 is called refractory grade, 46% Cr_2O_3, wet bulk, f.o.b. by IM; SA4 is called metallurgical grade, friable lumpy, 40% Cr_2O_3 by IM.

[3]Philippines is called refractory grade, concentrates, f.o.b. by IM.